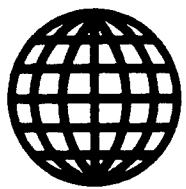


JPRS-TTP-89-015
14 NOVEMBER 1989



**FOREIGN
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JPRS Report

Telecommunications

19980202 174

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REPRODUCED BY
U.S. DEPARTMENT OF COMMERCE
NATIONAL TECHNICAL INFORMATION SERVICE
SPRINGFIELD, VA. 22161

DISTRIBUTION STATEMENT A

Approved for public release;
Distribution Unlimited

Telecommunications

JPRS-TTP-89-015

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NIGERIA

National Telecommunications Industry Growth Profiled

55000059 Lagos *THE GUARDIAN in English*
28 Sep 89 pp 6 & 14

[Article by Debo Adediji: "Telecommunications: Principal Vehicle in Economic Development"]

[Excerpts] The telecommunications industry in Nigeria has come of age. Most of the operating companies in Nigeria are either fully owned or majority shares are held by Nigerians and they are performing creditably well.

Telecommunications is a fast growing industry in the world and Nigeria's is no exception. However, it is important to emphasize that nearly 100 percent of equipment hardware is imported presently and this situation will continue to be so in the next decade.

This of course creates the problem of equipment compatibility and rationalization. It is the responsibility of the Ministry of Communications to ensure that necessary specifications are complied with by the various telecom operators/vendors. [passage omitted]

The development of telecommunications in Nigeria started around 1960, when Cable and Wireless of the United Kingdom established the Nigerian External Telecommunications Limited. However, it was not until 1963 before Nigeria took full ownership of the corporation and the name of the company was changed from Cable and Wireless Incorporated to the Nigerian External Telecommunications Limited (NET).

Before 1985, the telecommunications arms of the former P & T and Nigerian External Telecommunications Limited were responsible for the provision of internal and external telecommunications services for the nation. By 1984, the government realised that the quality of telecommunications services of the nation would be greatly enhanced if the two organisations were merged to form a single profit-oriented limited liability company.

The process for this merger was immediately initiated and by January 1, 1985, the Nigerian Telecommunications Limited (NITEL) was formed. NITEL is the only company under the supervision of the Ministry of Communications while the Nigerian Postal Service (NIPOST), is an extraministerial department under the ministry.

Since 1960, four national development plans had been executed. At the end of the First Development Plan (1960-1968) only about 22,000 new lines of telephone were provided resulting in a total capacity of 48,000 for the whole country.

The Second Development Plan (after the Nigerian civil war) 1970-1974 was directed towards rehabilitation and reconstruction as a matter of general government policy.

At the end of this period the total available telephone capacity nationwide was 87,000 lines.

During the Third National Plan 1975-1980, there was a significant investment in telecommunications. The government planned to increase subscriber lines to 750,000 using a much more modern switching system. In March 1975, contracts for the installation of telephone exchanges in 45 locations were awarded under a contingency plan. In 1977, contracts for an additional 120,650 lines in 147 locations were awarded. This was to yield a total of 120,000 additional lines.

The importance of telecommunications cannot be over-emphasised. It is a sign of awareness in the present day. It is the quickest way of communicating between families, friends, relations and the society. It covers all types of communication including television data, teletypewriter and facsimile. Presently, telecommunications offers 15 types of services. It is believed that by the year 2000, the number of services can be expected to double, making telecommunications a principal vehicle for the new economic development.

For now, Nigeria can boast of slightly more than 300,000 telephone lines and she has a population of more than 100 million people. This is definitely not enough. The Ministry of Communications though plans to increase subscribers lines to one million. Whether this will be possible or not, is left to the resources at their disposal.

Nigeria's present telecommunications system is analogue (this system needs three or more terminals for the same information services.) However efforts to change to digital system has been on for more than 10 years now. The digital system is what is being used in most parts of the world presently. It is significant in the economic growth of a country.

The digital system unlike the analogue need just a terminal for all information services. It can be programmed to meet specific needs of business community and designed to carry out all type of telecommunication services including video tele-conferencing high and low data for computer communications, electronic mail and telex etc.

The digital system will definitely be of advantage to Nigeria except that it will involve huge financial outlay and a high technology. It will be essential that the staff be trained and research development and constant monitoring not left out.

However, recently Nigerian National Petroleum Company (NNPC) installed the digital communications network regarded as one of the largest in Africa.

The network is the first major long-distance fiber optical system of its kind in Africa. Installation work was carried out at approximately 20 sites in Nigeria. The turnkey supplier was Ericsson, the Swedish-based telecommunications group.

Today's sophisticated digital networks also have a much longer life. Flexibility and future reliability are therefore core concepts when it comes to building networks, and know-how and experience on the part of the supplier is just as important as the products. Further expansions of the network will be simplified by the use of Ericsson's MD110 digital PBX for both speech and data communications.

The MD110 employs a simple modular building block called a line inter-face module. New modules can be added to expand the network in a fully integrated way up to more than 10,000 lines.

The latest in the telecommunication industry in Nigeria is the mobile phones. Though not yet approved by the Ministry of Communications some individuals and corporate bodies are already making use of this latest device.

SOUTH AFRICA

Contract Signed With SPOT Image/France

55000057 Paris LA LETTRE DU CONTINENT
in French 1 Sep 89 p 3

[Article: "The Continent: South Africa Subscribes to SPOT Image/France"]

[Text] For reasons which are undoubtedly financial, France chose to use the South African receiving station at Haartebeesthoek, 65 kilometers west of Johannesburg to intercept—along with a dozen stations in the world—the images from the SPOT satellite, rather than setting up another station in one of the Frontline countries (Zambia and Zimbabwe had been approached). As a matter of fact, the South African CSIR [Council for Scientific and Industrial Research] has confirmed the

signing of a contract—on the order of 5 million French francs per year—for the purchase of pictures from the SPOT Image company of Toulouse working in cooperation with the Swedish Satimage company (Kairuna station, with Toulouse one of the two stations for the distribution of SPOT pictures). The first pictures were received on 1 August and, "following the correction of a few technical problems," the reception will be operational by 1 September. The South African station has been receiving pictures from the American Landsat satellite for 10 years.

France has been using that station's services for reception by satellite since the sixties. But in order to free itself from dependence on South Africa, the Toulouse Space Center of the National Center for Space Studies [CNES] is studying a project for installing a satellite control station on the Kerguelen Islands (in the Southern Indian Ocean) by 1993. This project is part of the European Hermes program targeted for 1995 and of the French military Helios program. In addition to the South African station, which is also used by NASA, the Westerners have at their disposal the American Victoria station on the island of Mahe in the Seychelles Islands, and the one in Malindi, Kenya, used by the European Space Agency.

Editor's note: The leaders of the SADCC [Southern Africa Development Coordination Conference] countries claim that they are furious with France. Since 1985 Paris is said to have promised to build a station for the reception of SPOT pictures at a cost of \$30 million (plus \$4 million per year in operating costs) in one of those countries. The SPOT pictures are particularly important for agricultural development and mining research. But the SADCC countries are also afraid that the very precise definition of the SPOT pictures (20 meters in color and 10 meters in black and white) might provide Pretoria with usable pictures for military purposes.

**Northwest Telecommunications Cable Working
'Faultlessly'**

*OW2710120789 Beijing XINHUA in English
0837 GMT 27 Oct 89*

[Text] Xian, October 27 (XINHUA)—China's first long-distance automatic digital microwave telecommunications cable—from Xian to Longyangxia—has been working faultlessly since it began operation in September.

Spanning the loess plateau and the Qinghai-Tibet plateau, the cable stretches across 1,000 kilometers and has 33 microwave stations. It is the main line for the power grids in northwest China.

The cable was designed and constructed by the electrical departments in northwest China. It was completed in two years at a total cost of 27 million yuan (7.3 million U.S. dollars).

VIETNAM

Teleprinter Exchange Commissioned in Hanoi

*BK2110044489 Hanoi VNA in English
1507 GMT 21 Oct 89*

[Text] Hanoi VNA October 21—An electronic teleprinter exchange named Eltex-v/Alpha was put into commission here yesterday. Present at the inaugural ceremony were Dang Quang Than, head of the Vietnam

general department of posts and communications, and Claude Blanchemaison, French ambassador to Vietnam.

The department spent more than two million U.S. dollars to buy the equipment for the exchange from the French company SAGEM (Societe d'application generale electronique mecanique). The 1,024c line exchange consists of 100 junctions connecting Hanoi with foreign stations and 92 junctions, with Ho Chi Minh City.

POLAND

Choice of French Telecommunications Firm Viewed as Controversial

90EP0065a Warsaw GAZETA WYBORCZA
in Polish 7 Sep 89 pp 4-5

[Article by Pawel Smolenski: "Hello, Telephone Exchange!"]

[Text] A Poznan enterprise, Telcom-Teletra, intends to acquire a license for manufacturing telephone exchanges through the mediation of the Electrim Foreign Trade Agency. The acquisition of licenses means adapting Polish telecommunications to the next few dozen years. In this particular case, a letter signed by Ministers Wilczek and Kaminski has ordered signing a contract with Alcatel, a French company, by 30 September 1989. Evaluations of bids from other companies are to be submitted by that deadline too. Why should those other bids be evaluated, considering that the license is to be acquired from France?

When in the mid-1980's the Ministry of Communications conceived the idea of acquiring a new international dial exchange and the money for it was found, bid requests were sent to some 15 different Western companies. Following a preliminary screening, three companies survived for consideration: the Dutch-United States ATT and Phillips, the West German Siemens, and the French Alcatel. (Alcatel is, according to its Western competitors, the most aggressive company on the Eastern market. Allegedly it does business in the following manner: it forms a strong delegation, including persons from the French Ministry of the Post, and it fishes for contacts at the ministerial level somewhere east of the Elbe, which in countries with a centralized economy practically guarantees success.) To run ahead of the course of events, let me say that the contest was won by the French.

The Minister: Only Alcatel for Poland

Janusz Kaminski, the minister of Transportation, Navigation, and Communications in the government of Mieczyslaw Rakowski, feels strongly that purchasing Alcatel exchanges was the only just choice. Supposedly several considerations spoke in favor of this choice. First, the French offered the lowest bid. Second, the specifications of the purchased exchanges are the best of those offered to Poland. Third, the time limit for implementing the contract was the most favorable. Fourth, Alcatel finds it easy to acquire export permits from COCOM, an international organization monitoring the sales of advanced technologies and equipment to the countries of East Europe. So then everything seems to be in order. But that is not so.

The Committee of Experts: Siemens is Best

So then, when the acquisition of new exchanges began to be considered, the then Minister of Communications

Wladyslaw Majewski appointed in June 1987 a special commission of experts to evaluate the bids. The members of that committee included Engineer Jozef Kozlowski, an employee of the Directorate General of the Polish Post, Telegraph, and Telephone, who stated:

"The costs of the dial exchanges manufactured by Alcatel, ATT-Philips, and Siemens, reduced to about the same level, about US\$6 million. The Americans even proposed building the exchanges on long term credit at an interest rate of only 5 and 1/2 percent. The time limits for implementing the contract also were similar, except that Siemens could do it soonest. As for the technical considerations, the design solutions of the ATT and Siemens are not comparable with those of Alcatel: the levels are completely different. The French are a good firm, but the Germans and the Americans are much better (this is not an isolated opinion of experts. In Western expertises on 30 different telecommunications companies Siemens is ranked the best while Alcatel takes the hardly creditable next-to-last rank.)

To be sure, it has been said that the technically advanced ATT and Siemens solutions may be an obstacle to Poland, but such an argument can be considered when production licenses are acquired. As known, after all, modern design solutions also mean greater simplicity of servicing.

And what about the COCOM? As for it, the uncertainty is the greatest. But if Alcatel can obtain an export license, then ATT and Siemens should have no problem either."

To make the committee's decision as objective and credible as possible, its members used a point system in ranking the firms. Points were credited for price, technical advantages, and even such an insignificant matter as an assessment of contacts with the firms and their amenability to negotiation. The committee faced indeed a very serious problem: which to choose, ATT or Siemens? Alcatel's bid was rejected in the preliminaries, because when the choice is between good and better, better is chosen. At least that is how it should be.

The New Committee: Siemens is Too Advanced

When the committee ended its work, the issue of purchasing the exchanges fell into the cracks. Between the end of 1987 and the beginning of 1989 conferences were held at the highest levels. (It is worth noting that an investment of US\$6 million in the dial exchange would be recouped within 3 months, which means that during the intervening period sizable profits have been forfeited.) It might seem that Alcatel lost the battle. But miracles do happen.

Minister Janusz Kaminski appointed a new committee, this time one composed of directors. The committee considered the flaws in the Siemens bid. The principal flaw found was that the Siemens dial exchange is too advanced and Polish engineers are too stupid to catch on to these innovations and, further, that accepting the Siemens bid would mean that the future of Polish

telecommunications would hinge on the caprices of that firm. In contrast, Alcatel was praised.

This opinion is represented by, among others, Director Filipiak of the General Directorate of the Polish Post, Telegraph, and Telephone. He believes that all the dial exchanges, including those of Alcatel, meet the specified requirements. Second, engineers may assess the level of products but they lack global thinking, thinking in categories of the entire national economy, which does not at all need optimal solutions. What matters more is the possibility of coproduction with the Western partner, the opportunity of manufacturing spare parts by Polish factories, etc., etc.

The Experts Ask: Why Precisely Alcatel?

Dr Jelowicki of the Office of Communications Research and Design, a member of the committee of experts, opined:

"The dial exchange purchased represents a totally different system from that which the Poznan Telettra may begin to manufacture. Therefore, in my opinion, the production of spare parts cannot be considered here. Besides, the quality of the electronic products manufactured by the Polish industry is known: a miracle would have to happen before its standards would become comparable with Western ones."

Engineer Krzysztof Helbing (General Directorate of the Polish Post, Telegraph, and Telephone):

"The Siemens dial exchange is, owing to its advanced design, solutions, so simple to service that even a barber could cope with it. Second, it may be that its components are expensive nowadays, but the exchange is not something to be used in one day; in 5 years these components will decline in price, whereas components withdrawn from production, meaning the parts used in design solutions which at present are not state-of-the-art, will be the most expensive.

"Why the decision in favor of the French exchange? I do not know. Rumors have begun to circulate about this transaction—"Though 'tis only a fairy tale, it has a hidden meaning," Jan Brzechwa wrote [translation: there is no smoke without fire]—both in Poland ("This was a political decision. The signing of the contract coincided with Rakowski's visit to France") and abroad (the Americans from ATT speak about vacations spent in France by the heads of Polish telecommunications). The other rumors I shall not repeat, because anyone can guess what they are about. I do not care who is concerned about details and who about the whole. But I would like to hear competent representatives of the ministry explain why the rivalry among Siemens, ATT-Phillips, and Alcatel was won by the worst competitor.

INDIA

42 TV Transmitters Commissioned; 52 More Planned

BK3110132189 *Delhi Domestic Service*
in English 1230 GMT 31 Oct 89

[Text] Fifty-two low-power TV transmitters are to be commissioned during the next 10 days in different parts of the country. In the last 1 week, 42 transmitters were commissioned. These transmitters will extend TV coverage to the remote and inaccessible areas and are part of government's plan to extend the coverage of TV network under various schemes of the seventh plan.

QATAR

General Communications Infrastructure Discussed

90WT0004Z Doha AL-RAYAH in Arabic
3 Sep 89 p 8

[Article: "Communications Sector: Modern Network for Progress"]

[Excerpt] Qatar's excellent location in the midst of the western gulf coast has helped focus attention on the communications and telephone network that has accompanied the progress made by Qatar in all fields.

The Ministry of Transportation and Communications is currently implementing several projects and modernizing meteorological facilities, sea and airports, and postal services, in order to keep pace with the requirements of developmental expansion and the goals of social growth.

Domestic Communications Network

The Qatar General Organization for Wire and Wireless Communications, "KIWTL" [as published], operates, maintains and develops the system of wire and wireless communications. The organization has recently reorganized its internal affairs so that they now include the Bureaus of Financial Affairs, Engineering Affairs, Administrative Affairs, Commercial Affairs, and Operations. The country currently uses an integrated network of telephone communications, with a capacity of 118,000 lines covering all parts of the state.

The organization is carrying out several projects, the most important being increasing the number of lines for the vehicular telephone network from 3000 to 4500,

completing the installation of the al-Khawr electronic telephone exchange, and opening direct telephone lines with a number of nations.

Communications Land Stations

Three land stations for satellite communications are operational in the country. They are Doha 1, Doha 2, and the ARABSAT station, in addition to microwave lines between Qatar and Saudi Arabia, and the underwater cable that links Qatar with the United Arab Emirates and Bahrain in a network of direct, high-quality communications, with a capacity of 1200 telephone circuits. These are the most important accomplishments achieved by Qatar in the field of communications and transportation. Qatar is now linked by direct communications with approximately 165 nations of the world. [passage omitted]

Telex, Fax Charges Reduced

55004501 Doha GULF TIMES in English 6 Sep 89 p 3

[Article by Zafar Malik, staff reporter: "Telex and Fax To Be Cheaper"]

[Text] Qatar Public Telecommunications Corporations (Q-Tel) has decided to reduce telex charges and rental of fax equipment from October 1.

The decision was taken by the company's board of directors at its 26th meeting held last month and were announced yesterday by Q-Tel general manager Shaykh Hasan Bin-Khalid Al Thani at a news conference. Shaykh Hasan said telex rentals, and international and local telex call charges would be reduced by 20 percent.

He said fax equipment rentals would go down by 50 percent and Q-Tel would also sell and lease fax equipment.

The general manager said the board's decisions were in realisation of the company's objective of contributing to national economy and participating in the socio-economic construction.

Replying to questions, he said charges for international telephone calls and mobile phones would also be reviewed.

The number of mobile phones will also go up from the present 3,000 to 4,500 by November.

About the new building for Q-Tel, Shaykh Hasan said a consultant for the project was likely to be appointed soon.

Mr 'Abdallah Muhannadi, Q-Tel's administrative manager said more than 200 Qataris were employed by the company and their number was increasing every year.

CANADA

NorTel To Install Digital System for Manitoba Telephone

55200007 Toronto *THE GLOBE AND MAIL*
in English 29 Sep 89 p B8

[Article by Lawrence Surtees: "Manitoba Switches to NorTel for Major Telephone Contract"]

[Text] Northern Telecom Ltd. of Mississauga has been awarded a \$166-million digital telephone switching contract by the Manitoba Telephone System, the Crown-owned telephone company said yesterday.

The contract is part of a \$793-million program to update Manitoba's telephone network by 1996. Digital switching technology allows telephone companies to offer a wider variety of voice, data and enhanced services, as well as manage their network more efficiently and cheaply.

Although MTS embarked on its modernization program in the early 1980s, "previously we put every single contract for a switch out to tender," Barry Gordon, vice-president of network services at MTS, said in an interview. "Having a bulk contract frees us from repeated tenders and gives us the advantage of working more closely with a single supplier."

The contract will save the provincial government about \$30-million, Glen Findlay, the minister responsible for MTS, said in a statement.

"These cost savings will help keep rate increases to a minimum in the coming year," Mr. Findlay said. Manitobans have the lowest bills for basic telephone service in Canada because of provincial subsidies to MTS.

The contract is the largest of its kind to be awarded to the telecommunications equipment maker in Western Canada, said Robert Ferchat, president of Northern Telecom Canada Ltd.

In 1976, Northern Telecom became one of the first companies in the world to pioneer the use of digital, or computerized, switches to route subscriber telephone calls.

Northern Telecom beat its largest international rivals, including American Telephone & Telegraph Co. of New York, L. M. Ericsson Telephone Co. Inc. of Sweden and Siemens AG of West Germany.

Under the contract, MTS will be able to install and upgrade 340,000 telephone lines to digital switching, particularly in rural areas of the province.

"The contract will allow us to develop a much closer relationship with MTS that will allow us to work in partnership to leverage their investment," Mike Unger, vice-president and general manager of digital switching at Northern Telecom Canada, said in an interview.

Northern Telecom will help MTS plan the use of its network and design new services.

Minister Announces Radar Satellite Project Approval

55200004 Toronto *THE GLOBE AND MAIL*
in English 14 Sep 89 p B3

[Article by Drew Fagan: "Radar Satellite Project Receives Approval"]

[Text] HULL, Que.—The launch of a state-of-the-art Canadian radar satellite in 1994 will generate up to \$500-million in sales of information and more than \$1-billion in spin-off benefits, federal Industry Minister Harvie Andre says.

"The data will be highly valuable to a lot of people. We intend to sell it," he said at a press conference to announce approval for what is being billed as the largest federal-provincial technological project ever undertaken.

Radarsat represents a new generation of observation satellite, capable of discerning objects as small as 20 metres wide from an orbiting height of 800 kilometres. Unlike satellites now in orbit, which depend on advanced camera-like technology, the radar equipment would be able to obtain images at night or through clouds.

No such commercial radar satellites are now in orbit, said Larkin Kerwin of the Canadian Space Agency, but by 1994 the European Community and the United States will have launched ones of their own.

The satellite, which will view each part of the globe every three weeks, is expected to provide valuable scientific and environmental information on agricultural changes, pollution, deforestation and natural disasters such as forest fires, drought and flooding.

"The markets for this type of data are growing," said Dr. Kerwin. "Canada will be one of the most well-placed countries to participate and show leadership in this field."

But getting final approval has been a long and contentious process. Last year, Britain pulled out of the project. And extensive negotiations have been held to finalize the financial contributions of the four provinces—Ontario, Quebec, British Columbia and Saskatchewan—that wish to be involved in the management of the program.

Under the formula announced yesterday, 75 percent of the \$441-million project will be paid by Ottawa. The other \$110-million will be financed in equal amounts by the private sector and the four provinces.

Ontario and Quebec will finance the lion's share of provincial contributions. Ontario reduced its planned spending earlier this year over concerns about the amount of work on the satellite that is to be performed in Quebec.

Now, Ontario plans to contribute up to \$15-million, with another \$10-million in related spending. Ontario expects Radarsat to generate at least \$64.5-million in contracts for Ontario-based space industry companies.

Quebec plans to spend \$32-million on the project, for which it expects to receive \$140-million in economic benefits.

A consortium of private companies, to be known as Radarsat International, has been established to sell data that can be obtained by the satellite. A surge of orders is expected in the first few years for such relatively simple information as three-dimensional maps. But such demand, while continuing to cover annual operating costs of up to \$15-million, is expected to slow down later.

The United States has already signed contracts to receive some of the data. The National Aeronautics and Space Administration, which will launch the satellite at a cost of \$20-million, will receive information from it in return.

Telesat Mobile Unveils Communications System for Trucking

55200006 Toronto *THE TORONTO STAR* in English
27 Sep 89 p F3

[Article by Philip DeMont: "Telesat Mobile Unveils High-Tech 'Road KIT'"]

[Text] Telesat Mobile Inc. has unveiled a \$9.7 million high-tech communications system to let truckers keep in touch with head office through computer terminals.

"We think that vehicle satellite networks will play a key role in the world of telecommunications," Eldon Thompson, chief executive officer of Telesat Mobile, said yesterday.

Eighteen months in development, the new system, called Road KIT, will allow companies to locate their fleets by using a central tracking board, a satellite and portable computer terminals in the vehicles. Then management can send empty trucks to pick up new orders, get help for disabled vehicles and make better use of their trucks.

For the 10-month old Telesat Mobile, Road KIT is their first offering to the public. The potential trucking market is "tens of millions of dollars," Thompson said.

"We believe it will increase the competitiveness of the trucking industry," said Michael Zuliani, Telesat Mobile's president.

The truckers agree. Allied Van Lines Ltd., a \$100 million moving company, expects to spend more than \$1.2 million by 1990 to equip 200 trucks with this new gadgetry, according to company president Jay Lilge. Officials of two other transport companies, Thompson Transportation Ltd. and Fredrick Transport Ltd., said they also want to try the new system. And the federal government is buying 300 terminals.

Telesat Mobile sees other uses for the technology. The company hopes to sell a variation of Road KIT to marine firms. As well, the Quebec government has expressed interest in using the high-tech system for its emergency services.

In fact, Thompson predicted Telesat Mobile will reach \$100 million in revenues within four years largely by selling this technology in different forms.

To develop Road KIT, Telesat Mobile received \$4.8 million over three years from the Ontario government.

But Telesat Mobile cannot sell the system in the U.S. Through an agreement with American Mobile Satellite Corp., the company will be able to provide satellite coverage for the entire North American continent. But interested U.S. companies will have to deal with American Mobile.

Telesat Mobile is a subsidiary of Telesat Canada, which owns 50 percent of the company. Canadian Pacific Ltd. holds a 30 percent stake while C. Itoh Group of Japan owns 20 percent.

CRTC Approves Maclean Hunter Takeover of Selkirk

55200002 Toronto *THE GLOBE AND MAIL*
in English 29 Sep 89 pp B1, B4

[Article by John Partridge: "CRTC Approves Selkirk Takeover; Maclean Hunter Must Pay To Break Up Media Company"]

[Excerpt] HULL—The federal broadcast regulator has approved the takeover of Selkirk Communications Ltd. by Maclean Hunter Ltd., but it has ruled that the media company must ante up another \$21.2-million for the privilege of buying and breaking up Selkirk.

Maclean Hunter, based, like its target, in Toronto, bought the broadcasting and cable company in a takeover worth more than \$600-million that began late last year. It subsequently struck deals worth a total of more than \$310-million to sell off vast chunks of Selkirk to three other companies: WIC Western International Communications Ltd. of Vancouver; Blackburn Group Inc. of London, Ont.; and Rogers Communications Inc. of Toronto.

Canadian Radio-Television and Telecommunications Commission vice-chairman L. R. (Bud) Sherman said at a press conference that the \$21.2-million was the size of the financial gain Maclean Hunter was making on the purchase and breakup, "and we are not prepared to permit that to happen in these circumstances."

Instead, said Mr. Sherman, the federal broadcast regulator has ordered Maclean Hunter to invest the money in a capital fund to be used to strengthen and improve Canadian broadcasting.

The CRTC also has nixed several parts of the dismemberment: the proposed sale, for about \$60-million, of Selkirk's ailing flagship TV station, CHCH-TV of Hamilton, to Blackburn Group, the biggest single resale deal; and the sale of two Edmonton radio stations, CJCA and CIRK-FM, to WIC.

And it vetoed a related purchase, by Selkirk, of Montreal radio stations CKVL and CKOI-FM from Radio Futura Ltee.

However, with only a single dissenting voice, the eight-member executive committee of the CRTC ruled that, with those exceptions, the series of deals meet the commission's key criteria of strengthening and enhancing the broadcasting system, while not producing any undue degree of ownership concentration, or of cross-ownership of different types of media outlets in the same cities.

The dissenter was commissioner Paul McRae, who said the deals create a "concentration of editorial power, which I find potentially damaging to the maintenance of a strong pluralistic society."

The CRTC's blessing gives Maclean Hunter the key Selkirk properties in Canada it wanted to keep: Toronto FM radio station CFNY-FM; and Ottawa Cablevision Ltd. (Selkirk's single most valuable asset, a Florida cable system that Maclean Hunter also plans to keep, is outside the CRTC's jurisdiction).

The CRTC has given Maclean Hunter six months either to pull together a business plan and spending package for CHCH, if it decides to keep the station for itself, or to ask permission to sell it.

The communications giant, which already has extensive cable TV interests, as well as a vast publishing arm that includes Maclean's and Chatelaine and a controlling stake in tabloid newspaper publisher Toronto Sun Publishing Corp., also has six months to come up with an acceptable offer for the Edmonton radio stations.

It must sell CIRK-FM and CJCA because it already owns stations in Alberta's capital.

WIC president Ray Peters said his company plans to put together a new offer for the Edmonton radio stations. The CRTC said it was turning down this deal because WIC wasn't providing a big enough so-called "benefits package" for the stations and because it is not happy with the performance of several of WIC's other radio stations, which the company operates through subsidiary Westcom Radio Group Ltd.

Mr. Peters, however, attributed this to "a breakdown in communications" between WIC and the CRTC and added: "We'll fix that."

He said that over all, he is delighted with the CRTC's decision, which allows WIC to complete the purchase of \$190-million of the \$270-million worth of Selkirk properties it wanted to buy.

These include; CFCA-TV in Calgary and Lethbridge; and the 50 per cent and 36.9 per cent of the shares of Okanagan Valley Television Co. Ltd. of Kelowna and British Columbia Broadcasting Co. Ltd., respectively, that WIC did not already own.

James Sward, president of Rogers' subsidiary Rogers Broadcasting Ltd., expressed delight that the CRTC has decided to let his company go ahead and complete its \$24.5-million purchase of 11 Selkirk radio stations in British Columbia and Alberta. [passage omitted]

Government To Review Rules Dividing Telephone, Cable

55200003 Ottawa THE OTTAWA CITIZEN in English
13 Sep 89 p A5

[Excerpt] Toronto (CP)—Bell Canada has moved a step closer to competing in the cable-television business.

The federal Communications Department says it is considering changing rules that have kept cable companies separate from telecommunications carriers, and has issued a notice calling for comments from both industries on potential changes.

Cable companies are now prevented by federal law from competing with local telephone companies and Bell Canada has been prevented since 1968 from holding broadcast or cable licences.

"The need has been identified to establish new rules to govern the operation of these two (now) distinct industries so that each may flourish in a healthy competitive environment," the department notice says.

Titled Local Distribution Telecommunication Networks, the notice was issued by Richard Stursberg, the department's assistant deputy minister for technology, research and telecommunications.

It was published in the CANADA GAZETTE on Sept. 2 and asks for comments by Jan. 2, 1990.

Stursberg says technological changes, including the use of fibre-optic lines and digital transmission services, are allowing both industries to "offer increasingly similar services over two (currently) independent networks."

However, the issue of convergence between the two industries had been given renewed urgency by Toronto-based cable magnate Ted Rogers's foray into the telecommunications business.

Rogers Communications Inc. recently completed a deal to buy 41 percent of CNCP Telecommunications Ltd. of Toronto. [passage omitted]

ISO Certifies Mitel Manufacturing Quality Control Standard

55200005 *Toronto THE GLOBE AND MAIL*
in English 14 Sep 89 p B7

[Article by Lawrence Surtees: "International Standards Body Certifies Mitel"]

[Excerpt] Mitel Corp. of Kanata, Ont., has received certification that the quality management system of its domestic manufacturing plant meets the requirements of a new international standard.

The telecommunications equipment and semiconductor maker is one of only two North American companies to have its manufacturing quality control procedures certified under the standard, according to the Canadian Standards Association.

The CSA is responsible for ensuring domestic applicants meet the standard set by the Geneva-based International Standards Organization. Mitel received certificates registering its compliance with the ISO 9002 standard yesterday.

"There are strong indications that registration against ISO 9002 will be a prerequisite for companies wishing to do business in Europe after 1992," John Jarvis, Mitel president and chief executive, said in an interview.

He said the company received the ISO 9002 certification for its British-based operations last year. British Telecommunications PLC of Britain owns 51 percent of Mitel. [passage omitted]

FINLAND

Large Investments To Be Made in Converting to ISDN

55002493 *Helsinki HELSINGIN SANOMAT* in Finnish
3 Sep 89 p 27

[Article by Hannu Sokala: "Finland Embraces ISDN [Integrated Services Digital Network]"]

[Text] In the near future, Finnish telecommunications companies plan to invest billions of Fmk in a technology that will become obsolete in a few years.

Everyone who uses telecommunications networks, including households, must pay for it. At first only business firms will use the network. Households have not been asked whether they want to foot the bill.

The first ISDN or so-called common network exchanges have already been put into use. Marketing of the network begins in earnest next year. Finland will be one of the first countries to introduce the network.

Finnish telecommunications companies now sell so-called narrowband ISDN. The broadband network, which is much more efficient than the narrowband, will be introduced by the middle of the next decade.

Marching in the vanguard, Finland must invest more money in the network than those countries that wait for the technology to improve and the market to grow.

Speech Made From Zeros and Ones

ISDN is an acronym for integrated services digital network. All communications in ISDN are digitized.

In the older analog system, acoustic waves that generate speech are converted into electromagnetic waves. The sound moving through the network changes somewhat because of electromagnetic disturbances.

Eight thousand times a second, the digital system takes a byte of sound that it converts into a digital string of "zeros and ones" that computers understand. Each byte consists of eight bits, or zeros and ones.

Into current telephone lines, ISDN opens two lines whose transfer rate is 64,000 bits a second. In addition to two 64-kilobit channels, the network has a 16-kilobit control channel that monitors and directs two other channels.

Two conversations can be conducted simultaneously on the same ISDN line. Sound travels unchanged on the lines. During conversation, the line can also transmit telefacsimile and messages between computers.

In ISDN, telefacsimile occurs six times faster than in an ordinary telephone network.

ISDN requires reprogrammed digital exchanges. Users also need new data terminal equipment or connection units.

Expensive Project Not Adequate for Microcomputers

ISDN data terminal equipment is still very expensive. An ISDN telephone costs about 1,000 Fmk more than an ordinary telephone.

With the help of the International Telecommunication Union (ITU), ISDN is becoming the global standard: The same equipment works everywhere in the world.

The standards defined so far are slack. This has resulted in the incompatibility of different manufacturers' equipment.

In the capital city region, Nokia's ISDN exchange is in Tapiola, and Siemens' ISDN exchange is in Sornainen. An ISDN telephone bought for Tapiola does not work in Sornainen, or vice versa.

The telecommunications institutes of 18 European countries have agreed to settle on definitive standards by the year 1992. This deadline may be extended, according to some estimates.

The common network has been slow to spread because it requires digital exchanges. Roughly half of Finland's telecommunications network is digitized, but the level of digitization is much lower in many other countries.

ISDN will be marketed initially for intracompany and intercompany data transfer. Attempts will later be made to sell ISDN to homes.

Microcomputer efficiency has risen so fast that ISDN's 64-kilobit transfer connection will not be adequate for long. ISDN is unable to transmit a moving picture.

The common network is also being peddled for inter-computer communication within offices. However, local area networks that link office computers to each other are starting to become common so quickly that people are hard put to find markets for ISDN.

Trial Run Began Last Year

The British computer firm Logica estimates that just 0.5 percent of the equipment linked to Europe's telephone network will function in the common network in 1994.

The Telephone Companies' Alliance has also begun to adopt a cautious attitude toward the spread of ISDN. It estimates that by 1994 only 2 percent of its customers will have ISDN equipment.

Trial runs of ISDN began in France and the United States in 1987. The Helsinki Telephone Association (HPY) began a trial run in March of last year.

By the end of this year, HPY intends to provide 15 exchanges with ISDN software. The National Board of Postal Services and Telecommunications (PTL) has two ISDN exchanges at its disposal. HPY and PTL opened ISDN communication last week from Helsinki to Hyvinkaa.

Network Has Already Cost 9 Billion Fmk

The ISDN now being built will be replaced in a few years by a so-called broadband ISDN: Fiber-optic cables, along which as many as 1,000 calls can be transmitted simultaneously, will be run into homes and firms.

Fiber-optic cables can handle 140 megabits, or 140,000,000 bits, per second. This makes it possible to transmit movies and television programs through a "telephone network."

A broadband ISDN can be started up quite quickly. Finland's telecommunications network will use fiber-optic cable almost entirely by the year 1995.

Despite the fiber-optic cable network, industry utters its loud support for narrowband ISDN. The manufacturers want to fund first the narrowband and then the broadband network from equipment sales.

America's Intel estimates that in 1993 the microcircuits required by ISDN will be sold for over 4 billion Fmk.

The telecommunications companies and the equipment manufacturers have already invested approximately 9 billion Fmk in ISDN development.

The telecommunications companies are marketing the common network as revolutionary. They have received support from people in high places: Prime Minister Harri Holkeri (Conservative Party) himself delivered a lecture at the ceremony during which HPY announced the ISDN.

For a long time in Britain, ISDN was called a contrivance the subscribers do not need. Recently it has been called "something the subscribers still don't need."

FRANCE

Japan to Use Ariane Launcher

*90WT0003A Paris LIBERATION
in French 26 Sep 89 p 12*

[Article by Paul Loubiere; first paragraph is LIBERATION introduction]

[Excerpts] In 1989, four out of five satellites orbited by the Japanese will be launched on Ariane. This represents a commercial success for the European launcher.

In December, Arianespace will launch two Japanese satellites simultaneously, Superbird B and BS 2X. The mission of the first is to facilitate Japanese telecom links, and the second will improve television coverage for the NHK television network.

A technological feat, this dual launch also demonstrates the commercial dynamism of the company which this year is bagging 80 percent of the Japanese market. Better yet, over the last several months, Ariane has acquired the habit of being pretty much on time and, above all, fulfilling its mission.

Technological flexibility gives Arianespace the ability to adapt to last-minute no-shows or urgent requests: its technology now allows clients to choose their "own" launcher from some 10 versions, according to the size, weight, and orbit of the satellite.

Today, the stumbling block is no longer the launcher but the satellite itself. It is not unusual for a client to order a launch on a specific date, only to find its satellite not ready on time. The risk to Arianespace is finding itself on the pad with nothing to launch. The commercial function takes on added importance here.

With the number of dual launches (two satellites on the same rocket) growing, when one satellite drops out of the picture, a replacement has to be found that is compatible (in terms of volume, weight, and orbit) with its "flight companion." On 15 December, a double launch was planned with the English Immarsat [International Maritime Satellite] and Superbird B. Immarsat was not

ready, leaving one place open. Last January, the Japanese NHK network expressed its need for a launch within a very short time frame. Arianespace was hired to ready BS 2X for Immarsat's place. Only 11 months will be needed to prepare the launch, compared to the average time frame of 3 years.

This new contract brings the number of Japanese satellites Arianespace will launch this year to four. It lost out only once, to the American Titan rocket. [passage omitted]

Ariane's 30 successful launches reflect a new attitude within the company. It is no longer emphasizing pure research or building a rocket for reasons of prestige or national pride. Nowadays space is just another market. The number of companies involved in space in one way or another grows constantly. Arianespace therefore has to become an economic workhorse.

Furthermore, the Japanese are in the process of mounting their own launcher, H-2, which should be operational in early 1993. With more competing launch rockets coming on line, Ariane is in grave danger of losing its hold on the market. Well aware of the problem, Frederic d'Allest [president of Arianespace] has stated simply, "The future will tell which of the two rockets, the Japanese H-2 or the next-generation rocket, Ariane 5, will offer users the best rate per kilo in orbit." But Frederic d'Allest is probably one of only a few French business leaders who is not losing sleep over Japanese competition.

NETHERLANDS

Netherlands PTT To Invest in ISDN

89AN0320 Newbury *BENELUX ALERT* in English
31 Aug 89 p 15

[BENELUX ALERT Summary of Report in Rotterdam NRC HANDELSBLAD in Dutch on 19 August 1989 p 15]

[Text] The Netherlands PTT plans to invest at least 500 million guilders in Integrated Services Digital Network (ISDN) by 1995. ISDN is a telephone network which can simultaneously transmit sound, image, and computer information using the same connection. PTT expects that ISDN will receive a lot of use in the Netherlands, because not only is it quicker and more reliable than the existing network but it also offers a lot more possibilities. PTT will test its ISDN network in Rotterdam in October 1989, 4 months behind the other European networks. The experiment will last 3 years and will cost about 15 million guilders. Robeco, investment trust company, will be one of the companies subscribing to ISDN during its testing period. ISDN is expected to be launched commercially in four major Dutch cities in 1992. Only in 1996 will the whole of the Netherlands be able to be connected to this new network. Charges for being connected to the new network will be higher than for the present network.

NORWAY

First of Four New Switching Centers Delivered

55002495 Oslo *AFTENPOSTEN* in Norwegian
29 Sep 89 p 5

[Article by Svein Nic. Norberg: "New Telecommunications Possibilities in Trondheim"]

[Text] Trondheim.

The Telecommunications Agency took delivery on Norway's first ISDN switching station in Trondheim on Thursday. The switching station, which was delivered by Alcatel STK, marks the beginning of a number of new services from the Telecommunications Agency, which in addition to telephone, data, text, and imagery can be sent over one and the same line.

This digital switching station in Trondheim is the first of what will be a total of four System-12 switching centers to be coupled together into one common test network. The three other ISDN-switching centers in Oslo, Bergen, and Stavanger will be delivered to the Telecommunications Agency in October, but the test network will be activated by 1990.

The Telecommunications Agency first used a digital switching center in 1986, and by now almost 1 million lines have become digitized here in the country. With the introduction of ISDN-switching centers (ISDN stands for Integrated Services Digital Network) passes into the 1990's telenetworking system.

Swedish Firm Gambles on Telecommunications Network

55002496 Oslo *AFTENPOSTEN* in Norwegian
5 Oct 89 p 21

[Text] Telecommunications will now be a distinctive business sector within the Swedish million kroner concern, Esselt. The liberalization of the telecommunications market results in the company's establishing an Esselte Telecom company in every Nordic country's capital city.

The liberalization of the telecommunications market in Scandinavia will be completed 1 July next year regarding user equipment. This large market is expanding vastly—with a yearly growth rate of 15 to 20 percent.

Telecommunications Network Realizes 200 Million Kroner Loss

55002489 Oslo *AFTENPOSTEN* in Norwegian
30 Aug 89 p 5

[Article by Trygve Monsen: "Lower Telephone Traffic Results in 200 Million Kroner Loss"]

[Excerpt] Because the increase in telephone traffic has leveled off, the telecommunications network will take in 200 million kroner less this year than provided for in the last revised budget. In less than a year, the growth rate has dropped by almost 40 percent.

"We have revised our growth estimates for this year to 6.2 percent. Earlier this year, we revised the estimates from 8 to 7.3 percent," tells Oyvind Moltumyr, section head of the firm's chief administration.

The telecommunications network experienced the greatest drop in income when the Norwegian economy collapsed and the growth in telephone services came to a halt. In the first quarter of 1988, there was an increase of 12 percent in terms of units, but this dropped to 8 percent during the year. Therefore, the growth for 1989 was reduced from 10 to 8 percent. This resulted in 517 million kroner less in income than provided for in the company's original 1989 budget.

At the same time, after several years of record growth the telecommunications network is approaching zero growth in terms of number of subscribers. Only 2 years ago, the network had a net increase of 104,000 subscribers; however, this figure dropped to approximately 70,000 last year. This year, there will probably be a net increase of only 40,000 subscribers.

The telecommunications network continues to expect a surplus of up to 1.5 billion for 1989, however, this assumes that expenses can be cut to make up for reduced income. There will be some savings since less overtime will be required, and there will be reduced material expenses as the number of new telephone subscribers goes down. [passage omitted]

UNITED KINGDOM

New Leeds Company To Specialize in Fiber Optics

55500129 Leeds YORKSHIRE POST in English
29 Jul 89 p 5

[Excerpt] A new company, Complete Opto-Electronics, has been formed in Leeds to win a slice of what is likely to be a £1bn-a-year European market by 1992.

It will develop specialist products for the fibre optics market.

The company has been formed by a small team of former STC technical people who did not want to move to South Wales when STC decided to close its Leeds operation.

Backing for COE, a fibre optic video company, has come from Yorkshire Enterprise, Lloyds Bank Commercial Services and RoyScot Trust, who contributed to the funding package of almost £500,000. Staff at COE also invested their own money.

Design and development work is now underway on single channel and multi-channel low cost fibre optic transmission systems for video, audio and data use.

Target application areas include motorway surveillance, large site perimeter security and cable television.

Leeds has been a major centre for the fibre optic industry since the 1960s, when the potential of fibre optics for transmitting information over long distances was recognised. [passage omitted]

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